Remarks

It is noted that the Examiner has rejected claims 1 – 11, 14 – 18, and 21-22 as anticipated by the newly cited reference Smith et al. under 35 USC 102(b) in view of the applicant's amendments. As an initial point, such rejection is respectfully traversed because Smith was published on Feb 2, 2002, which is **after** the filing date of the present application, namely December 17, 2001. Smith cannot therefore be a citable reference under 35 USC 102 (b) as alleged in the Final action, since, as noted in the passage quoted in the Final Action, 35 USC 102(b) only applies to references published more than one year before the applicant's filing date, which Smith was not. In the applicant's respectful submission, therefore, such rejection must be withdrawn as being unsustainable under 35 USC 102(b). Such an improper rejection clearly would not stand up on appeal.

A minor correction of an obvious error has been made to claim 22. It is apparent from the disclosure, and self evident, that switching of sources occurs when the performance of the active source becomes worse than the performance of the redundant source. Unfortunately, the claim could have been construed to imply the reverse, which was clearly not intended. Obviously, the source selector will not switch to the redundant source when the performance of the redundant source is worse than the currently active source. It is believed that this correction should be allowable under 37 CFR 1.116 as by clarifying and making an obvious correction to the wording of previously presented claim 21, it places the application in better condition for appeal.

While Smith is not citable under 35 USC 102(b), assuming *arguendo* that Smith were a citable reference, the applicants respectfully point out that the Examiner's arguments do not stand up to scrutiny under the strict requirements of anticipation.

The invention is concerned with a communication switch having a redundant data path. In the acknowledged prior art, the system switches over to the redundant system in the event of a failure in the active source. The problem with this prior art is that situations can arise where the health of the redundant system is worse than that of the active system, so switching to the redundant system makes matters worse. The invention overcomes this problem by continually monitoring the health of the datasources, and ensuring that the appropriate source is selected based on the health of all the sources.

Smith does not address this problem. Smith relates to a conventional system employing active and redundant data paths, wherein a switch from the working path to the redundant path

occurs if the working path becomes unavailable (see paragraph [0017]. Smith is concerned with error correction wherein error correction information needs to be transmitted to the destination to enable received data to be corrected. According to the prior art acknowledged by Smith, error correction information is transmitted as "part of the transmitted frame or in a subsequent frame" (see paragraph [0014]). Smith overcomes this problem by transmitting the error correction information over the redundant path instead of as overhead in the active path.

Smith does not address the same problem as the invention and therefore not surprisingly fails to disclose a number of aspects of the invention as will be discussed in more detail below.

In order to meet the test of anticipation, it is essential that

> "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros., Inc. v. Union Oil Co.* , 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987).

The Federal Circuit has also stated:

"An anticipating reference must describe the patented subject matter with sufficient clarity and detail to establish that the subject matter existed and that its existence was recognized persons of ordinary skill in the field of the invention". ATD Corp. v. Lydall, Inc., *48 USPQ 2d 1321.*

Claim 1 recites "a plurality of datasources operating independently and outputting in parallel the same data subject to data transmission errors..." Clearly Smith does not teach outputting the same data subject to transmission errors because the whole basis of Smith is that the redundant path carries the FEC information (paragraph [0022]). This cannot by any stretch of the imagination be regarded as the same data as is carried by the active path. Moreover, in discussing the specific embodiment, paragraph [0069] makes it clear that the data sent over the protected (redundant) path is not the same as the data sent over the working path.

Claim 1 recites a validation module associated with said plurality of said datasources for transmission errors. Smith fails to disclose such a validation module, although without disclosing such a module Smith states vaguely in paragraph ([0022]) that the FEC information provides "a way to actively monitoring (sic) the health/quality of the working and protected paths within the system". However, Smith fails to disclose the recited assessment module which receives information from the validation module (not explicitly disclosed) and uses this information to instruct a source selector to select as the active

datasource one of the datasources based on the operation performance of said plurality of datasources as recited in claim 1. There is no teaching in Smith of switching from from active to redundant path (or the working path to the protected path, to use the language of Smith) after assessing the health of the plurality of datasources in the manner claimed.

Smith absolutely fails to disclose the recited source selector. Taking each of the pargraphs identified by the Examiner in turn:

[0022] This paragraph teaches that the FEC information can be used to monitor the health of the working and protection paths, but there is no teaching of switching over the paths based on this information.

[0024] This paragraph teaches that the system transmits error information, but there is no teaching of performing the switch from the working path to the redundant path based on the operational heath of said plurality of data sources, as recited. So far, Smith only teaches switching on basis of the health of one of the data sources (i.e its unavailability) as noted in paragraph [0016].

[0026] This paragraph teaches that the FEC information is used to correct bit errors with data frames of the working path. There is no teaching of switching as recited in claim 1.

[0058] This paragraph relates to the operation of the encoder/decoder. There is no teaching of switching from the working to protective path based on the operational health of the plurality of datasources.

[0062] Preceding paragraph [0060] makes it clear that in the configuration described the incoming data is present on path 413 and the error correction information is present on path 414. Obviously when switchover occurs for a reason that is unspecified, the encoder/decoder needs to know about so that it knows to take the error correction information from path 413 and the incoming data from path 414. This paragraph teaches that this changeover is accomplished by means of signal 421. What this paragraph does not teach is that the changeover from the working channel is selected based on an assessment of the health of the plurality of channels.

Upon detailed scrutiny, Smith clearly fails to teach each of the limitations of claim 1 to the standard required by the courts and could therefore be considered as teaching the limitations of claim 1 under the standard of anticipation notwithstanding its non citability under 35 USC 102(b).

Similar arguments apply *mutatis mutandis* to independent method claim 11 and will not be repeated in detail. Suffice it to say that Smith clearly does not teach the recited method steps of assessing the operational performance of the plurality of datasources and switching based on the operational health of the plurality of datasources.

With regard to independent claim 21, it is respectfully submitted that the Examiner's arguments are completely unsustainable. Claim 21 relates specifically to the embodiment illustrated in Figure 1B, wherein the path switches back and forth. For example, with regard to the cross connects recited in claim 1, the Examiner just refers vaguely to paragraphs [0015 – 0018] of Smith. These paragraphs teach the following:

> [0015] Communication systems exist that have redundant or "backup" data paths that are used in situations where the "primary" or working path is unavailable for transferring data. A backup or redundant data path is a data path that is parallel to the working path between a source and destination of data. A data path may include one or more physical components such as copper, fiber, or other active or passive components. In some network configurations, the redundant path carries a copy of data transmitted on the working path, may not carry data under normal operating conditions, or other configuration wherein the redundant path is not relied on in a normal operating condition for transmitting working data. Data channels may be defined between a source and a destination which use one or more data paths.
>
> [0016] A conventional approach for a networking system that provides both a working path and redundant path includes transmitting working data over the working path and potentially the redundant path. Because the redundant path in a conventional system carries no useful information or just a duplicate of the original information, the redundant path provides very little benefit except to be present in case the working path becomes unavailable. In this case, the system switches to the redundant path to transfer working data.
>
> [0017] One type of network that provides redundant data paths is the Synchronous Optical Network (SONET) standard defined by the American National Standards Institute (ANSI) for communicating data over optical fiber. An equivalent transmission standard approved by the International Telecommunications Union-Telecom (ITU-T, formerly CCITT) is called Synchronous Digital Hierarchy (SDH). SONET has been used extensively in North America, and SDH has been used world-wide outside of North America. SONET/SDH communication systems, called terminals, may be arranged in a linear or ring architecture wherein terminals are coupled by one or more optical fibers. When more than one fiber is used, one fiber may be designated as a working fiber used to transmit information under normal operating conditions. Another fiber may be designated as a backup, redundant, or protection fiber that does not, under normal operating conditions, carry information. In the event that the working fiber fails, the SONET/SDH terminals recognize the failure and switch all of

the information to the protection fiber. Once the working fiber is restored, transmission of information may be switched back to the working fiber.

[0018] According to one aspect of the invention, a system and method are provided that uses a first data channel to pass working data and a second data channel to pass error correction information. For example, this second data channel may be defined along a redundant data path. For example, this error correction information may be forwarded error correction (FEC) information such as Hamming code information or any other type of error correction information. Use of the redundant path to forward FEC information provides several advantages: 1) the FEC information can be used to correct bit errors that occur within the system, making the system high-quality and more reliable and 2) provides an efficient method to constantly monitor the quality of both the working and redundant path. Monitoring may be accomplished, for example, by transmitting the FEC information on the redundant path in conjunction with the information on the working path to accurately count the number of errors that occur on the working and redundant paths. Information provided by monitoring the number of errors can then be used to diagnose problems on the working path, so that problems can be fixed before there is a need for the communication system to switch over to the redundant path.

These paragraphs only refer to working and redundant paths. The applicants can find no teaching of cross connects in these paragraphs as recited in claim 1. The two data paths disclosed in Smith are independent without any cross connects between them. The Examiner is reminded of the strict criteria set forth by the courts required to meet the test of anticipation.

Also, to suggest that these paragraphs suggest the recited source selector is in the applicant's respectful submission stretching the teaching of Smith beyond the bounds of reason. There is clearly no teaching in Smith of switching between pairs of upstream data sources as recited in claim 21. Smith does not address the question of when switching occurs, and certainly does not disclosing switching back and forth through cross connects as recited.

Regarding claim 2, it is not understood how the error correction module can be considered the same as the recited validation module, but even assuming *arguendo* that that were the case, there is no teaching that each of such sub-modules being is associated respectively with one of the plurality of datasources. This language means that there is a one-for-one correspondence between the submodules and datasources, which is clearly lacking in Smith.

It is believed that the remaining claims also teach limitations not present in Smith, but since they also draw their patentability from the base claims, it is not proposed at this point to discuss each remaining sub claim in turn.

USSN: 10/015,572
Art Unit: 2161
Response to Final action mailed 10/21/2005

It is believed that the application is in condition for allowance. Allowance and reconsideration are therefore earnestly solicited.

Respectfully submitted,

Registration No. 34519
Richard J. Mitchell
Agent of Record

MARKS & CLERK
P. O. Box 957, Station B,
Ottawa, Ontario, Canada
K1P 5S7
(613) 236-9561